

NATURAL RESOURCES CONSERVATION SERVICE VIRGINIA CONSERVATION PRACTICE STANDARD

FEED MANAGEMENT

(No. of Systems and AUs Affected)

CODE 592

DEFINITION

Managing the quantity of available nutrients fed to livestock and poultry for their intended purpose.

PURPOSE

- Supply the quantity of available nutrients required by livestock and poultry for maintenance, production, performance, and reproduction while reducing the quantity of nutrients, especially nitrogen and phosphorus, excreted in manure by minimizing the overfeeding of these and other nutrients.
- Improve net farm income by feeding nutrients more efficiently.

CONDITIONS WHERE PRACTICE APPLIES

Confined livestock and poultry operations on which more nutrients are imported to the farm than are exported and/or utilized by cropping programs.

Confined livestock and poultry operations that have a significant accumulation of soil nutrients due to manure application.

Confined livestock and poultry operations that do not have enough land to apply manure nutrients at rates recommended by soil test.

Livestock and poultry operations seeking to enhance nutrient efficiencies.

CRITERIA

General Criteria Applicable to All Purposes

The diets for specific animal species will be developed in accordance with recommendations from one of the following:

- Standards outlined in the most current recommendations of the National Research Council (NRC).
- Recommendations of the Virginia Polytechnic Institute and State University (VPI) and Virginia State University (VSU), or other land grant university.
- Standards developed by the professional nutritionists of livestock and poultry production companies, feed companies, and/or feed suppliers.

Laboratory analysis will be performed on the formulated diet, or on the feed ingredients used to formulate the diet, to determine its nutrient content.

Feed analyses will be conducted by laboratories whose tests are accepted by VPI and VSU. Data from analyzed feed ingredients and/or appropriate historic feed analysis information for the operation will be used for adjustments of ration formulation.

Diets and feed management strategies will be developed by professional animal scientists, independent professional nutritionists or other comparably qualified individuals. When

Conservation practice standards are reviewed periodically and updated as needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service State Office, or download it from the electronic Field Office Technical Guide for your state.

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required by state policy or regulation, animal nutritionists will be certified through any certification program recognized within the state.

Diets will be formulated to provide the quantities and correct relative ratios of available nutrients required by the animal species type or class to meet the goals for which the plan is being developed.

Adjustments to nutrient levels will be provided to meet specific genetic potential, environmental demands, and/or requirements to ensure animal health, well being, and productivity.

One or more of the following feed management practices and/or diet manipulation technologies will be used to reduce N, P, and other excreted nutrients while maintaining the health, well being, and productivity of the animal:

- Formulating diets closer to animal requirements.
- Reducing protein and supplementing with amino acids for non-ruminants.
- Supplementing with protein sources high in rumen un-degradable protein or rumen protected amino acids for ruminants.
- Manipulating the crude protein and energy (carbohydrates and fat) content of the diet to enhance the availability of amino acids (ruminants).
- Using highly digestible feed, as appropriate, in the diet.
- Using phytase and reducing the supplemental phosphorus content of the diet (non-ruminants).
- Reducing the phosphorus content of ruminant diets when it exceeds their requirements.

- Using selected enzymes or other products to enhance feed digestibility or feed use efficiency.
- Using growth promotants as allowed by law.
- Implementing phase feeding.
- Implementing split sex feeding.
- Using a nutrient balancing program for monitoring diet levels of protein and phosphorus of animals on pasture receiving supplemental feeds.
- Using other feed management or diet manipulation technologies that have demonstrated the ability to reduce manure nutrient content.

Any needed manure analysis will be performed by laboratories whose results are accepted by VPI and VSU.

CONSIDERATIONS

Nutrient requirements for production based upon stage of growth, intended purpose of the animal and type of production (milk, meat, eggs) involved.

Nutrient content of the animal's drinking water to determine if diet adjustment is needed.

The potential impact of different feed ingredients (by-products) on the nutrient content of excreted manure.

The potential impact of feed management on the volume of manure excreted and its storage requirements.

The impact of animal and feed management practices on manure odors, pathogens, animal health and well being.

Using concentrates and forages grown on the farm to minimize nutrient import and to maximize on farm nutrient recycling.

Analyzing fresh and stored manure to determine its nutrient content and to estimate the effect of the feeding strategy.

PLANS AND SPECIFICATIONS

Plans and specifications for feed management will be in keeping with the requirements of this standard. They will describe the specific feed management practices and/or technologies that are planned for the operation and be documented on the Conservation Practice Job Sheet VA-592.

The following components will be included in the feed management plan:

- The client's management objective and specific motivation for implementing this practice.
- The type of technology and/or feeding practices that will be used on the operation.
- Feed analyses and ration formulation information prior to and after implementation of feed management on the operation.
- The estimated or measured manure nutrient content prior to a new feeding strategy.
- The estimated impact that feed management will have on manure nutrient content.
- Guidance for how often the feed management plan will be reviewed.
- The quantities and sources of nitrogen and phosphorus that will be fed.
- Identification of the qualified feed management specialist who developed the plan.

OPERATION AND MAINTENANCE

The producer/client is responsible for the operation and maintenance of the feed management plan. Operation and maintenance activities address the following:

- Periodic plan review to determine if adjustments or modifications are needed.
- Routine feed analysis to document the rates at which nitrogen and phosphorus were actually fed. When actual rates fed differ from or exceed the planned rates, records will indicate the reason for the differences.
- Maintaining records to document plan implementation. As applicable, records include:
 - ◆ Records of the initial estimate of the impact the feeding strategy was expected to have on reducing manure nutrient content.
 - ◆ Records of any manure analysis that was done after the feeding strategy was implemented to determine manure content.
 - ◆ Dates of review and person performing the review, and any recommendations that resulted from the review.
 - ◆ Records of feed analysis and ration formulation, including the record of ration formulation used prior to implementing the feeding strategy.

Records of plan implementation will be maintained at least five years but longer if required by federal, state or local ordinances, programs, or contract requirements.

REFERENCES

Technical Notes located on the NRCS website at:

<http://policy.nrcs.usda.gov/scripts/lpsiis.dll/TN/TN.htm>

Effect of Diet and Feeding Management on Nutrient Content of Manure

Feed and Animal Management for Beef Cattle

Feed and Animal Management for Swine
(Growing and Finishing Pigs)

Feed and Animal Management for Poultry

Feed and Animal Management for Dairy Cattle

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